

Amendment  
Serial No. 09/939,332  
Page 2

States patent 5,422,139, issued Jun. 6, 1995), and Collins et al. (United States patent 6,077,384, issued Jun. 20, 2000).

B. The Examiner rejected claims 7, 10-13, 16-19, 21-23, 25, and 26 as being unpatentable over Bang et al. (United States patent 6,110,556, issued Aug. 29, 2000) in view of Okamoto et al. (Japanese Patent Publication 2000-252218), Fischer (United States patent 5,422,139, issued Jun. 6, 1995), and Collins et al. (United States patent 6,077,384, issued Jun. 20, 2000) and further in view of Wicker et al. (United States patent 6,129,808, issued Oct. 10, 2000), and Wu (United States patent 5,910,221, issued Jun. 8, 1999).

These rejections are respectfully traversed.

The Applicants note that under Subtitle H of the Inventor Protection Act of 1999, for patent applications filed after November 29, 1999, 35 U.S.C. § 103(a) is amended such that subject matter which would qualify as prior art under 35 U.S.C. § 103 via 35 U.S.C. § 102(e) is now disqualified as prior art, if the subject matter of the claimed invention and the prior art are commonly owned. Under these provisions, Bang et al. is excluded prior art under 35 U.S.C. § 103 with respect to the claimed invention, since Bang et al. is assigned to Applied Materials, Inc., of Santa Clara, California, as is the subject application.

In addition, Applicants enclose a declaration under 37 C.F.R. § 1.131 that has been executed by co-inventors, Eric Askarinam, Jeremiah T. Pender and Gerardo A. Delgadino, that declares a conception date for the invention claimed in the above-identified patent application to be before the August 29, 2000 issue date of Bang et al. and that due diligence was exercised toward reducing the invention to practice. In view of this declaration, Bang et al. is not prior art to Applicants' invention.

As stated in MPEP 715.04, a declaration filed under rule 37 CFR 1.131 requires the signature of each of the joint inventors unless it is shown that an inventor or inventors were "otherwise unavailable". In that instance the signatures of the remaining inventors is sufficient. Inventors Robert Wu, Hoiman Hung, Ananda Kumar, Olga Regelman and Douglas Buchberger were unavailable to

Amendment  
Serial No. 09/939,332  
Page 3

execute a declaration. Mr. Hung and Mr. Kumar are no longer employed at Applied Materials, Santa Clara, California. Mr. Wu, Ms. Regelman and Mr. Buchberger did not respond to requests to provide an executed declaration before the due date for this response.

Therefore, the Applicants submit that the basis for the Examiner's rejection of claims 1, 6, 8, and 9 relying on Bang et al. as well as the rejection of claims 7, 10-13, 16-19, 21-23, 25, and 26 relying on Bang et al. has been removed with the filing of the declaration under 37 C.F.R. § 1.131. As such, the Applicants respectfully request that the rejection of claims 1, 6, 8, and 9 and claims 7, 10-13, 16-19, 21-23, 25, and 26 pursuant to 35 U.S.C. § 103(a) be withdrawn.

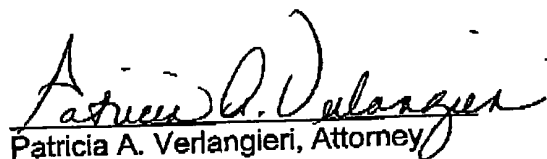
#### CONCLUSION

Thus, the Applicants submit that none of the claims presently in the application are obvious under the provisions of 35 U.S.C. § 103. Consequently, the Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Raymond R Moser Jr., Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

2/24/03

  
Patricia A. Verlangieri, Attorney  
Reg. No. 42,201  
(732) 530-9404

FAX RECEIVED  
FEB 25 2003  
GROUP 1700

Amendment  
Serial No. 09/939,332  
Page 4

Moser, Patterson & Sheridan, LLP  
Attorneys at Law  
595 Shrewsbury Avenue  
Suite 100  
Shrewsbury, NJ 07702

Please continue to direct all correspondence to:

Patent Counsel  
Applied Materials, Inc.  
3050 Bowers Avenue  
P. O. Box 450A  
Santa Clara, CA 95052

CERTIFICATE OF FACSIMILE TRANSMISSION under 37 C. F. R. §1.6

I hereby certify that this correspondence is being transmitted by facsimile under 37 C.F.R. §1.6 on February 24, 2003 and is addressed to the Commissioner for Patents, Washington, D. C. 20231, Facsimile Number: (703) 872-9310.

Allyson M. DeVesty

Type or print name of the person signing certification

Allyson M. DeVesty  
Signature

FAX RECEIVED  
FEB 25 2003  
GROUP 1700

INVENTION ALERT FORM

## INVENTION ALERT FORM

TO: Gaile Bailey M/S 2061  
Extension: 32724

ALERT NO: 0005102  
Date: \_\_\_\_\_

CIRCLE ONLY ONE FROM TOP ROW (REQUIRED FIELD):

TCG	CMP	ETCH	OTHER	CPES	ISM	AKT	APD	FET
IMPLANT/ BATCH 1077	CMP 1399	METAL 0881	IBSS 0676	CORE ENG 0793	CU WIRE 2492	AKT	APD	FET 3037
IMPLANT/ SWIFT 1755		SILICON 0916	SMO/GAS 1649	ATD 1301	AL WIRE 2492		CDSEM	MDR/ DSI 3047
SIGEN		DIELECTRIC/RIE 0521	SMO/PUMP 1651	EPS 2590	CORE PVD 2492		WF	
ORION 2471		DIELECTRIC/CP 0521	WMO 2792	CSM 2810	LINER/ BARRIER 2492		DRSEM	
EP/ SUBSTRATE 2470		CONDUCTOR ETCH 0894	PS/EPIC 2442		WCVD/ TUNGSTEN 2492		GEMI	
SCP 2512		CHAMBER TECH 0894	SCALPEL		CORE MDVD 2492		ICT	
TPG/RTP 0584		COMMON ENG 1419	CONSILIUM 2199		ISM-SYS 2492		RT	
TPG/LPVD 0584			ETEC		ISM-BASE 2492		OSI	
TPG/GATE 0584					ISM SOFTWARE 2492		CTO	
TPG/OTHER 0584					HDPCVD 0281			
PMD 3002					BLANKET CVD 0166			
					CORE DCVD 2492			
					LOW K 2445			
					ELK 2445			
IF APPROPRIATE - ADDITIONALLY SELECT ONE OF THE FOLLOWING MODULES:								
STI					Dual Dam			
CAP					CU			
GATE								
STACK-1498								

Please use separate attachments for any answers that don't fit on the form, especially for questions 3-8. If the answer to a question is "NONE", please write "NONE" rather than leaving the answer blank.

- Title of Invention (please print clearly): Silicon carbide, process  
Silicon carbide. Reg with integrated gas feed arrangement  
for oxide rich chambers.
- Inventors-Names only (please print clearly and provide complete information at Section 9.)  
Eric Askewman, Robert W. Perry, Pender, Raymond  
Amrinda H. Kumar, Olga Regelmann

FAX RECEIVED

FEB 25 2003

GROUP 1700

INVENTION ALERT FORM

3. Earliest dates and model names of all Applied products incorporating the invention which have been offered for sale or are expected to be offered for sale:

*α - Version to customer*

4. If the invention has been demonstrated or described to persons other than Applied employees, for each disclosure please provide the earliest date, name of company, a brief description of what was disclosed and the purpose of the disclosure. Attach a copy of any related non-disclosure agreements:

*Disclosure have been made to the following representatives of Suppliers under new ~~pat~~ non-disclosure or prevailing NDAs:*

① Tim Drinan - CERCOR -

② Jack Imai - NGE - loose

5. If future disclosures like those in Question #4 are expected to occur within the next 12 months, please provide the anticipated date, type of information to be disclosed, and purpose of the disclosure: NONE [ ]

③ Troy Cedar 2 Hubs

6. Describe any other known designs or processes, whether actually implemented or merely proposed in a publication, which could be considered similar to your invention or which constitute the state-of-the-art improved upon by your invention: If described in a publication, attach a copy of same or provide a citation.

*① Suspended GDP or shower heads in CVD app chambers of AMAT.*

FAX RECEIVED

FEB 25 2003

GROUP 1730

7. List each feature of the invention which you consider novel and non-obvious. Describe the advantages of each novel feature in comparison with the state-of-the-art approaches which are most similar to your invention:

The structure of the GDP - viz. embedded gas distribution plates or CVD-formed channels integral with the sic roof.

8. Describe the invention, preferably with reference to attached drawings:

This invention describes the <sup>general</sup> structure and methods for fabricating a chamber roof <sup>incorporating gas feed channels</sup> for <sup>oxide etch</sup> chambers. Silicon carbide of high bulk electrical resistivity is the material of choice ~~for~~ for roof because of its chemical resistance to F-plasma, its high purity and

ATTACH ADDITIONAL SHEETS TO DESCRIBE INVENTION AS NEEDED

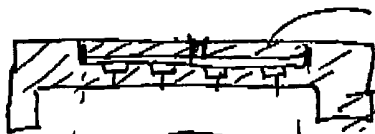
good RF coupling characteristics.

The advantages of incorporating the gas distribution channels within the roof structure (as over a suspended gas distribution plate) are the following: ① More robust construction ② there is no RF shadow cast by the free hanging GDP ③ The ability to create complex gas distribution paths. ④ less likelihood of particulate contamination ⑤ lower cost.

Prior art ① Gas was let in through holes in the aluminum pedestal and a process kit plate situated around the ceramic electrostatic chuck.

This invention: Two (2) embodiments of present invention

①



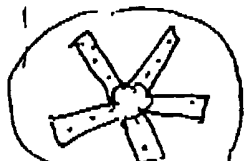
silicon carbide plate with desired gas distribution channels  
silicon carbide roof

②



Channels formed in a CVD sic carbide layer by composite

① Banded composite construction



INVENTION ALERT FORM

9. Provide the following information for EACH inventor:

Inventor #1:	ESIC ASKASINAM	Employee #	10311	Mail Stop	81510
Legal Name:					
Work Phone	408-584-2402	Fax No.:	408-584-2884		
Job Title:	Mechanical Engineering Manager				
Citizenship:	U.S.A				
Home Address:	1332 Pauline Dr., Sunnyvale, Ca. 94087				
Manager:	EVANS Lee	Title:			
Div. Manager		Title:			
Product Group:		Dept #:			

Inventor #2:	Robert Wu	Employee #		Mail Stop	
Legal Name:					
Work Phone		Fax No.:			
Job Title:					
Citizenship:					
Home Address:					
Manager:		Title:			
Div. Manager		Title:			
Product Group:		Dept #:			

Inventor #3:	Ananda H. Kumar	Employee #	6507	Mail Stop	81303
Legal Name:					
Work Phone	408-584-0173	Fax No.:	4-0271		
Job Title:	Fr. Member of Technical Staff				
Citizenship:	USA				
Home Address:	1999 Blackfoot Dr., Fremont, CA 94539				
Manager	Arnold Khododent	Title:	Director		
Div. Manager	Diana Ma	Title:	GM		
Product Group:	Oxide Etch	Dept #:	1245		

NOTIFICATION ALERT FORM

FOR ADDITIONAL INVENTORS, PLEASE COMPLETE AND ATTACH ADDITIONAL SHEET AS NEEDED.

## ADDITIONAL INVENTORS:

Inventor # : JERRY PENDER Employee # \_\_\_\_\_ Mail Stop \_\_\_\_\_  
Legal Name: \_\_\_\_\_  
Work Phone 408-584-2467 Fax No.: \_\_\_\_\_  
Job Title: \_\_\_\_\_  
Citizenship US  
Home Address 1565 Fuchsia Dr. San Jose CA 95125  
Manager: \_\_\_\_\_ Title: \_\_\_\_\_  
Div. Manager \_\_\_\_\_ Title: \_\_\_\_\_  
Product Group: \_\_\_\_\_ Dept #: \_\_\_\_\_

Inventor # : RAYMOND HUNG Employee # \_\_\_\_\_ Mail Stop \_\_\_\_\_  
Legal Name: \_\_\_\_\_  
Work Phone \_\_\_\_\_ Fax No.: \_\_\_\_\_  
Job Title: \_\_\_\_\_  
Citizenship: \_\_\_\_\_  
Home Address \_\_\_\_\_ Title: \_\_\_\_\_  
Manager: \_\_\_\_\_ Title: \_\_\_\_\_  
Div. Manager \_\_\_\_\_ Title: \_\_\_\_\_  
Product Group: \_\_\_\_\_ Dept #: \_\_\_\_\_

AS per  
interview  
w/  
Sec. A.  
→

Inventor Gerardo Delgadino Employee # \_\_\_\_\_ Mail Stop \_\_\_\_\_  
Legal Name: \_\_\_\_\_  
Work Phone \_\_\_\_\_ Fax No.: \_\_\_\_\_  
Job Title: \_\_\_\_\_  
Citizenship: \_\_\_\_\_  
Home Address: \_\_\_\_\_ Title: \_\_\_\_\_  
Manager \_\_\_\_\_ Title: \_\_\_\_\_  
Div. Manager \_\_\_\_\_ Title: \_\_\_\_\_  
Product Group: \_\_\_\_\_ Dept #: \_\_\_\_\_



INVENTION ALERT FORM

10. Signature, date and **PRINTED** name of each inventor plus two witnesses who have read and understood this Invention Alert form:

**Inventors:**Eric Askanian

Printed Name

Date

Signature

Robert Wu

Printed Name

Date

Signature

Ananda H. Kumar

Printed Name

Date

Signature

Jerry Pender

Printed Name

Date

Signature

Printed Name

Date

Signature

Printed Name

Date

Signature

**Witness:**Mark OBoyle

Printed Name

Date

Signature

Brashears

Printed Name

Date

Signature

**Return to:****Gaile Bailey****Mail Stop:****2061****Fax No.:::****986-3090****Extension:****563-2724**

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

PATENT APPLICATION

Applicant: Askarinam, et. al.

Serial No.: 09/939,332

Examiner: Anna M. Crowell

Title: TOP GAS FEED LID FOR SEMICONDUCTOR PROCESSING  
CHAMBER

COMMISSIONER OF PATENTS  
Washington, DC 20231

Case: 5102

Filed: August 24, 2001

Group Art Unit: 1763

SIR:

DECLARATION UNDER 36 C.F.R. § 1.131

I, Eric Askarinam, hereby declare as follows:

1. I am a co-inventor of the above-captioned patent application.
2. My co-inventors and I conceived of the complete invention as claimed in the above-identified patent application on or before August 29, 2000. Additionally, due diligence toward reducing the invention to practice was exercised from the conception date of the complete invention as well as the various portions thereof to subsequent reduction to practice of the invention.
3. To establish the conception date of the invention disclosed in the above-identified application that predates U. S. Patent 6,110,556 to Bang et al. issued August 29, 2000 (hereinafter referred to as the '556 patent). The following attached document is submitted as evidence of prior invention by Applicants: an invention disclosure form for the above-identified invention that was prepared by the inventors prior to the issue date of the '556 patent. Thus, the Applicants' conception date precedes the issue dates of the '556 patent. A

FAX RECEIVED

FEB 25 2003

GROUP 1700

Declaration  
Serial No. 09/939,332  
Page 2

subsequent constructive reduction to practice of the invention occurred on August 24, 2001 with the filing of the above-identified application.

The undersigned, Eric F. E. Askarinam, hereby declares that all statements made herein is of my own knowledge are true and that these statements made on information and belief are believed to be true and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent resulting therefrom.

2-24-03  
Date

Eric F. E. Askarinam  
ERIC ASKARINAM

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

**PATENT APPLICATION**

Applicant: Askarinam, et. al.

Case: 5102

Serial No.: 09/939,332

Filed: August 24, 2001

Examiner: Anna M. Crowell

Group Art Unit: 1763

Title: TOP GAS FEED LID FOR SEMICONDUCTOR PROCESSING  
CHAMBER

COMMISSIONER OF PATENTS  
Washington, DC 20231

S I R:

**DECLARATION UNDER 35 C.F.R. § 1.131**

I, Jeremiah T. Pender, hereby declare as follows:

1. I am a co-inventor of the above-captioned patent application.
2. My co-inventors and I conceived of the complete invention as claimed in the above-identified patent application on or before August 29, 2000. Additionally, due diligence toward reducing the invention to practice was exercised from the conception date of the complete invention as well as the various portions thereof to subsequent reduction to practice of the invention.
3. To establish the conception date of the invention disclosed in the above-identified application that predates U. S. Patent 6,110,556 to Bang et al. issued August 29, 2000 (hereinafter referred to as the '556 patent). The following attached document is submitted as evidence of prior invention by Applicants: an invention disclosure form for the above-identified invention that was prepared by the inventors prior to the issue date of the '556 patent. Thus, the Applicants' conception date precedes the issue dates of the '556 patent. A

FAX RECEIVED

FEB 25 2003

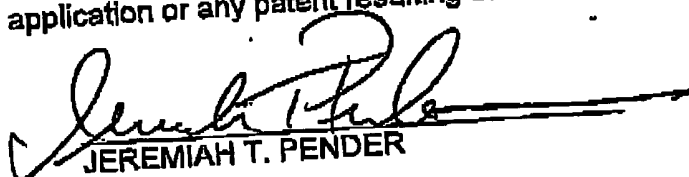
GROUP 1700

Declaration  
Serial No. 09/939,332  
Page 2

subsequent constructive reduction to practice of the invention occurred on August 24, 2001 with the filing of the above-identified application.

The undersigned, Jeremiah T. Pender, hereby declares that all statements made herein is of my own knowledge are true and that these statements made on information and belief are believed to be true and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent resulting therefrom.

2/11/03  
Date

  
JEREMIAH T. PENDER

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

**PATENT APPLICATION**

Applicant: Askarinam, et. al.

Case: 5102

Serial No.: 09/939,332

Filed: August 24, 2001

Examiner: Anna M. Crowell

Group Art Unit: 1763

Title: **TOP GAS FEED LID FOR SEMICONDUCTOR PROCESSING  
CHAMBER**

COMMISSIONER OF PATENTS  
Washington, DC 20231

S I R:

**DECLARATION UNDER 35 C.F.R. § 1.131**

I, Gerardo A. Delgadino, hereby declare as follows:

1. I am a co-inventor of the above-captioned patent application.
2. My co-inventors and I conceived of the complete invention as claimed in the above-identified patent application on or before August 29, 2000. Additionally, due diligence toward reducing the invention to practice was exercised from the conception date of the complete invention as well as the various portions thereof to subsequent reduction to practice of the invention.
3. To establish the conception date of the invention disclosed in the above-identified application that predates U. S. Patent 6,110,556 to Bang et al. issued August 29, 2000 (hereinafter referred to as the '556 patent). The following attached document is submitted as evidence of prior invention by Applicants: an invention disclosure form for the above-identified invention that was prepared by the inventors prior to the issue date of the '556 patent. Thus, the Applicants' conception date precedes the issue dates of the '556 patent. A

**FAX RECEIVED**

Received from <732 530 9808> at 2/24/03 4:39:14 PM [Eastern Standard Time]

FEB 25 2003

Declaration  
Serial No. 09/939,332  
Page 2

subsequent constructive reduction to practice of the invention occurred on August 24, 2001 with the filing of the above-identified application.

The undersigned, Gerardo A. Delgadino, hereby declares that all statements made herein is of my own knowledge are true and that these statements made on information and belief are believed to be true and further that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent resulting therefrom.

02-12-2003  
Date

  
GERARDO A. DELGADINO